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Inventor: application of: Trung T. Doan

Serial No.: 09/652,969

Filed: August 31, 2000

For: CHEMICAL DISPENSING SYSTEM FOR  
SEMICONDUCTOR WAFER PROCESSING

§  
§ Group Art Unit: 1763  
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§ Examiner: Sylvia R. MacArthur  
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§ Atty. Docket: 93-0421.05  
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REPLY TO THE EXAMINER'S ANSWER DATED APRIL 19, 2002

Commissioner for Patents  
Washington, D.C. 20231

Certificate of Mailing (37 C.F.R. § 1.8)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date below:

Dear Sir:

6/19/02  
Date

*Susan Jerome*  
Signature

Applicant herein responds to the Examiner's Answer dated April 19, 2002.

I. Section 2 of Examiner's Answer

Section 2 of the Examiner's Answer addresses related appeals and interferences. Applicant herein provides an update to the information originally presented in part II of the Appeal Brief. Specifically, concerning U.S. App. Ser. No. 09/133,989, Applicant filed an Appeal Brief on 5/6/02. As for U.S. App. Ser. No. 09/652,713, Applicant filed an Appeal Brief on 4/24/02, and the Examiner's Answer was mailed on 5/28/02.

## II. Section 5 of Examiner's Answer

Section 5 of the Examiner's Answer addresses the summary of the invention. In the third line of the summary (Examiner's Answer at p. 3), Applicant contends that the term "application" should be "applicator." (See Appeal Brief at part V.)

## III. Section 6 of Examiner's Answer

Section 6 of the Examiner's Answer addresses the issue for determination on appeal. Significantly, the Examiner admits that Applicant's statement of the issue is correct. The Examiner then proceeds to rephrase the issue in a manner that fails to address the aspect concerning the Examiner's failure to satisfy the burden for rejection. Applicant urges the Board to keep in mind that the Examiner has agreed that the true issue is whether the Examiner has failed to satisfy the burden for rejecting the claims as being obvious in light of Iwata combined with Milina.

## IV. Section 9 of Examiner's Answer

Section 9 of the Examiner's Answer addresses the prior art of record. Applicant notes that the two patents listed by the Examiner is not an exhaustive list of every reference cited during prosecution.

## V. Section 10 of Examiner's Answer

Section 10 of the Examiner's Answer addresses the grounds of rejection. Applicant notes that this section appears to be taken verbatim from the final Office Action, including the typographical error in the last sentence of paragraph 5, which refers to allowing a nozzle "t" be extended and retracted. (*Compare* Examiner's Answer at §10 *with* Office Action dated 9/26/01 at p. 2.)

## VI. Section 11 of Examiner's Answer

Section 11 of the Examiner's Answer addresses the Response to Applicant's argument and is further divided into subsections A&B. Applicant addresses each subsection separately below.

### A. Section 11, subsection A

In part A of Section 11, the Examiner acknowledges one of Applicant's arguments, wherein Applicant contends that the Examiner has misinterpreted Iwata in believing that Iwata discloses all of the claim limitations except for those concerning a nozzle's extended and retracted positions. (Appeal Brief at p. 3-5.) Specifically, Applicant pointed out that Iwata also fails to disclose claim 38's requirement that the nozzle, which is configured to dispense a chemical, be *disposed toward a workpiece*; claim 39's requirement that the nozzle be configured to dispense a chemical *toward a material overlying the workpiece*; and claim 40's requirement that the nozzle be configured to dispense the chemical *toward a portion of the workpiece*. (*Id.*) The Examiner's answer is to announce that "the nature of Iwata's invention" discloses such limitations. (Examiner's Answer at p. 5-6.)

Applicant presumes that the Board will have a similar problem that Applicant has with this answer, namely, it fails to address which component of Iwata satisfies all of the claim limitations specified above concerning Applicant's nozzle. It is significant that the Examiner's Answer reviews Iwata's disclosure twice – once in Section 10 and again in Section 11. In both instances the Examiner indicates that Iwata's invention includes a liquid jetting outlet and a liquid sucking inlet. In neither instance, however, does the Examiner purport to indicate which of these Iwata elements disclose the claimed nozzle limitations. Applicant contends that the Examiner cannot do so. Iwata's liquid sucking inlet, for instance, is not disclosed as being configured to dispense a chemical, as required by claim 38. Rather, the Iwata component's very name indicates that it is configured to do just the opposite. Accordingly, Iwata's liquid sucking inlet necessarily fails to disclose claim 39's nozzle, which is configured to dispense a chemical toward a material overlying the workpiece, as well as claim 40's nozzle, which is configured to

dispense the chemical toward a portion of the workpiece. Having disclosed only the opposite, this Iwata component cannot be interpreted to disclose these claim limitations.

The other Iwata component identified by the Examiner fares no better, as Iwata's liquid jetting outlet is not disclosed as being disposed toward the workpiece, which is required by claim 38. Rather, as detailed in the Appeal Brief, Iwata specifically discloses only the exact opposite disposition for the liquid jetting outlet, describes that disposition as being "essential," and warns that other dispositions result in an inoperative device. (Appeal Brief at p. 3-5.) Not only is Iwata's text contrary to claim 38's limitation, but Iwata's illustrations are also contrary, as seen in Iwata's FIG. 1, despite the Examiner's conclusion that that figure "clearly" supports rejection. Accordingly, Iwata's liquid jetting outlet necessarily fails to disclose claim 39's nozzle, which is configured to dispense a chemical toward a material overlying the workpiece, as well as claim 40's nozzle, which is configured to dispense the chemical toward a portion of the workpiece. Having disclosed only the opposite, this Iwata component also cannot be interpreted to disclose these claim limitations.

Thus, Applicant submits that the Examiner's failure to even attempt to apply either of the two main Iwata components identified by the Examiner to the claim limitations is a symptom of the Examiner's misinterpretation of Iwata. The Examiner's misinterpretation, in turn, highlights the Examiner's failure to meet the burden for rejection. Applicant further submits that the Examiner's general announcements concerning the "nature of Iwata's invention" do not cure this failure.

#### B. Section 11, subsection B

Part B of Section 11 acknowledges another of Applicant's arguments, wherein Applicant contends that the Examiner has erred in attempting to combine Iwata and Milina. In summary, Applicant pointed out that the references conflict on any level of analysis -- from their general premises to their specific devices and methods -- thereby discouraging one of ordinary skill in the art from even attempting to combine their teachings. As a result, Applicant concluded that the Examiner's purported motive to combine resulted from hindsight inappropriately gained from the

current application. (Appeal Brief at p. 6-10.) The Examiner's Answer raises several points which Applicant addresses separately below.

1. The Examiner's erroneous motive to combine

Part of the Examiner's answer is to restate the purported motive for combining the references: to provide ease of loading and unloading the wafer onto the holder by extending and lowering the nozzle. (Examiner's Answer at p. 6.) Significantly, the Examiner argues that the prior art itself provides this motivation. (*Id.* at p. 8.) However, the Examiner fails to cite any specific excerpts in the prior art that address that motivation. The only motivation expressed in Milina for moving the nozzle appears to be to allow optimization of Milina's edge bead removal process (Milina at col. 1, ln. 66-col. 2, ln. 8; col. 5, ln. 58-67). Applicant can find no disclosure in Milina concerning loading and unloading problems. Moreover, the Examiner has already admitted Iwata is silent concerning extending and lowering the nozzle, and Applicant can find no reference in Iwata concerning loading and unloading problems.

Further, even if one or both of the references mentioned the issue of loading and unloading, Applicant contends that the contradictions between the references' teachings, as addressed in the Appeal Brief, discourage one of ordinary skill in the art from applying one of the reference's techniques to the other. This is especially true given that the references address contradictory types of workpieces (Milina's circular wafer versus Iwata's elongated web) and contradictory methods of handling them (Milina's spinning versus Iwata's linear motion).

As a result, the Examiner is incorrect in arguing that the prior art provides the stated motivation. That alone suggests the Examiner's failure to meet the burden for rejection. As further support demonstrating the Examiner's failure, it follows that the Examiner's motivation is either utterly baseless or relies upon knowledge gained from the current invention. Applicant submits to the Board that either option is a legally improper basis for rejection.

## 2. The Examiner's first misinterpretation of Applicant's argument

The Examiner subsequently addressed the conflicts mentioned above. (Examiner's Answer at p. 6, last ¶.) Unfortunately, the Examiner misinterpreted Applicant's argument as an attempt to distinguish the intended use of the claimed invention from the prior art. (*Id.*) Applicant assures the Board that the intended use of the claimed invention is not being addressed. In fact, the claims are not being addressed at all in the relevant portion of the Appeal Brief. Rather, Applicant is attacking the Examiner's decision to combine the references. Applicant achieves this by analyzing how Iwata and Milina conflict with each other, thereby discouraging combination.

## 3. The Examiner's second misinterpretation of Applicant's argument

Still focusing on the conflicts raised by Applicant, the Examiner set forth another misinterpretation, accusing Applicant of relying on aspects not claimed in the present invention. (Examiner's Answer at p. 7, first two full ¶¶.) Again, Applicant stresses to the Board that the claim language is not the subject of the relevant argument. Rather, Applicant's argument is directed to the lack of motivation for one of ordinary skill in the art to combine the references. In which case, Applicant is obligated to address the references as a whole, which necessarily includes aspects that may not be addressed by the appealed claims.

## 4. The Examiner's mischaracterization of Applicant's analysis

The Examiner then accused Applicant of performing piecemeal analysis of the references. (Examiner's Answer at p. 7, third full ¶.) As detailed in the Appeal Brief, what the Examiner derides as "piecemeal" analysis, Applicant characterizes as part of examining the references as a whole, which is required by case precedent. (Appeal Brief at p. 8-9.) Significantly, the Examiner's next statement in this paragraph of the Answer admits a failure to abide by this very standard; specifically, the Examiner admits that Iwata was relied upon for its teaching of a dispensing nozzle and a suction nozzle, while Milina was relied upon to teach the extension and

retraction of the nozzles, thereby suggesting that the Examiner disregarded the rest of the references' disclosure. (Examiner's Answer at p. 7, third full ¶.)

#### 5. The Examiner's third misinterpretation of Applicant's argument

The Examiner's Answer subsequently commits yet another misinterpretation of Applicant's argument, believing that Applicant is attempting to attack references individually in order to distinguish the claims from the combined references. (Examiner's Answer at p. 7, fourth full ¶.) Applicant emphasizes to the Board that Applicant is not attacking individual references as they apply to the claims. Rather, Applicant is attacking the Examiner's decision to combine the references by analyzing how Iwata and Milina conflict with each other, without involving the appealed claims. Thus, while the Examiner's statement of the law may be correct, that law has no bearing on the current argument.

#### 6. The Examiner's inappropriate characterization of Applicant's argument

Next, the Examiner characterizes Applicant's arguments highlighting the conflict within the cited art as "spurious." (Examiner's Answer at p. 8, first ¶.) Applicant contends that the Examiner's characterization borders on violating the rule that "everything of a personal nature must be avoided" when choosing language for rejecting claims. (MPEP 707.07(d).) Applicant requests that the Board not let such comments distract from the facts that (1) the cited prior art references conflict with each other on any level of analysis; and (2) the Examiner has failed to adequately explain away such conflicts.

#### 7. The Examiner's repeated admission of the failure to follow case precedent standards

The Examiner's Answer then repeats that specific portions of the references were relied upon (Examiner's Answer at p. 8, second ¶), thereby once again demonstrating the Examiner's failure to consider the references as a whole.

8. The Examiner's announcement of the 103 rejection and repetition of the purported motive to combine

The Examiner subsequently announces that the references form part of a 103 rejection. (Examiner's Answer at p. 8, third ¶.) Applicant does not dispute this. However, the Examiner's need to make this statement suggests that the Examiner has misunderstood Applicant's arguments. Applicant hopes that the Board views Applicant's arguments with greater clarity. The Examiner then repeats the purported motive to combine those references (*id.*), which Applicant has refuted above in part (B)(1).

9. The Examiner's misquote attempting to support the assumed motive to combine

In the next paragraph of the Answer, the Examiner restates the assumed motive to combine, citing page 4, lines 23-27 of Milina. (Examiner's Answer at p. 8, fourth ¶.) However, Applicant notes that page 4 of Milina is a page of figures, with no lines of text. Assuming the Examiner meant the fourth page of text, that page contains nothing but claims, and those lines do not appear to support the Examiner's statement. Assuming the Examiner meant the fourth column of text, lines 23-27 address adjusting the distance between Milina's nozzle from Milina's wafer but mention nothing about loading and unloading wafers. Thus, the Examiner's next statement that the assumed motive comes from the prior art is unfounded, as addressed above in part (B)(1). (Examiner's Answer at p. 8, fourth ¶.)

10. The Examiner's admission of using hindsight

The Examiner then admitted that hindsight was used to determine obviousness, and claimed that other case precedent justified that action. (*Id.*) Specifically, the Examiner cited *In re McLaughlin* (443 F.2d 1392, 170 U.S.P.Q. 209 (C.C.P.A. 1971)) for support. However, *McLaughlin* actually favors Applicant in that it highlights the Examiner's failure to meet the



burden for the obviousness rejections. *McLaughlin* emphasizes that, in considering whether to combine references for an obviousness rejection, the Examiner must consider what the references “*taken as a whole* would suggest to one of ordinary skill in the art.” (*McLaughlin*, 170 U.S.P.Q. at 212 (emphasis added).) Applicant asserts that considering the references as a whole necessitates more than merely focusing on their points that may arguably support an obviousness rejection; rather, it further requires considering the conflicts between the references, as required by *In re Young* ( 927 F.2d 588, 18 U.S.P.Q.2d 1089 (Fed. Cir. 1991) (cited in the Appeal Brief)). The Examiner has failed to address how such conflicts would affect one of ordinary skill in the art. Hence, the Examiner has failed to satisfy the standards set forth by the very case precedent cited by the Examiner.

Moreover, the Examiner’s failure to address the conflicts between the references suggests that the Examiner has ignored those conflicts and somehow been able to focus on certain aspects of the references that justify, in the Examiner’s mind, the rejection of the relevant claims. Applicant submits that the guidance for such focus can only come from the current application. In using the current application in such a manner, the Examiner has violated another tenet of *McLaughlin*, which requires that the “[j]udgment on obviousness . . . not include knowledge gleaned only from applicant’s disclosure.” (*McLaughlin*, 170 U.S.P.Q. at 212.) Thus, the conflicts within the Iwata/Milina combination and the Examiner’s failure to address those conflicts warrant a withdrawal of any rejection relying on that combination.

#### 11. The Examiner’s failure to satisfy the *Graham* analysis

The Examiner then lists the factual inquiries set forth in *Graham v. John Deere Co.* (383 U.S. 1, 148 U.S.P.Q. 459 (1966)) to be determined in considering obviousness. (Examiner’s Answer at p. 9.) Applicant contends that the Board’s inquiry into the facts highlighted by *Graham* will demonstrate the Examiner’s failure to meet the burden for rejecting the claims. For example, focusing on determining the scope and contents of the prior art, Applicant has demonstrated that the Examiner ignored most of the content of both Iwata and Milina, which conflict on any level of analysis. As for ascertaining the difference between the prior art and the claims, the Appeal Brief and Examiner’s Answer demonstrate that the Examiner has mistakenly


assumed that Iwata discloses all of the claim limitations except for those concerning a nozzle's extended and retracted positions. Moreover, those documents indicate that the Examiner has failed to articulate how Milina fails to cure Iwata's dearth of disclosure. The fact that the Examiner believes one of ordinary skill in the art is able to sift through the legion of conflicts between the references and pick only those excerpts which arguably address the claims suggests that the Examiner has not properly resolved the level of ordinary skill in the pertinent art. Further, the Examiner's cavalier disregard of the magnitude of the references' conflicts demonstrates that the Examiner has not considered the objective evidence – the references' disclosure themselves – indicating non-obviousness. Hence, the Examiner has failed to satisfy the very standards set forth by the Examiner. As a result, the Examiner's conclusion in the subsequent paragraph (Examiner's Answer at p. 9) is untenable.

## VII. Conclusion

The Examiner's Answer demonstrates a misinterpretation of Applicant's arguments that Applicant hopes have been clarified for the Board by this Reply. The Examiner's Answer further demonstrates the Examiner's failure to satisfy the burden for rejecting the appealed claims. Specifically, the Examiner's Answer demonstrates (1) a misinterpretation of Iwata; (2) the Examiner's failure to indicate whether or how Milina might cure Iwata's lack of disclosure; and (3) the Examiner's failure to consider Iwata and Milina as a whole. Moreover, because the references are rife with contradictions at any level of analysis, Applicant contends that an ordinary artisan would be actively motivated to avoid their combination. As a result, Applicant respectfully repeats the request that the Board withdraw the rejections and allow the claims.

Respectfully submitted,

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